Carrier

• AIR CONDITIONING •
REFRIGERATION • HEATING

CARRIER SERVICES

AIR CONDITIONING–REFRIGERATION–UNIT HEATING

Carrier

CARRIER CORPORATION,
South Geddes Street
SYRACUSE • NEW YORK

Printed in U.S.A.

ROOM UNITS
AIR CONDITIONING AND VENTILATING

SUMMER, WINTER OR YEAR 'ROUND

(See Pages 10 and 11 for Refrigeration Units)

¾ to 1½ Tons, 25,000 B.t.u. maximum heating

TYPE 48F—WEATHERMAKER—Floor Mounted

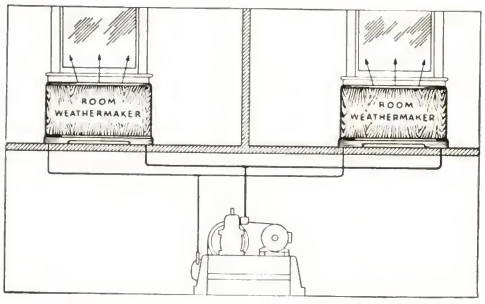
Application—This unit may provide any combination of air conditioning functions. Where the capacity indicated above is inadequate, more than one unit may be used.

Operation—Two quiet, centrifugal fans, direct connected to a 1/30 Hp. motor, and a carefully designed humidifying spray assure quiet operation. Complete temperature controls are provided for summer and winter operation. A hygrostat for humidity control is supplied when specified.

Installation—This unit is installed in the conditioned space with a Freon compressor unit located at some remote point. Also available for Methyl Chloride. Provision is made for refrigerant, water and steam or hot water connections, and for a drain line. A 4-in. deep opening the width of the unit is available for connection to outside air.

Cabinet Finish and Dimensions—The cabinet is attractively finished in grained walnut. It occupies a floor space 43½ in. by 12½ in., and is 24 in. high.

Type 48F Room Weathermaker



Installation Diagram Two 48F Units

SUMMER, WINTER OR YEAR 'ROUND

(Self Contained Unit)

¾ Ton

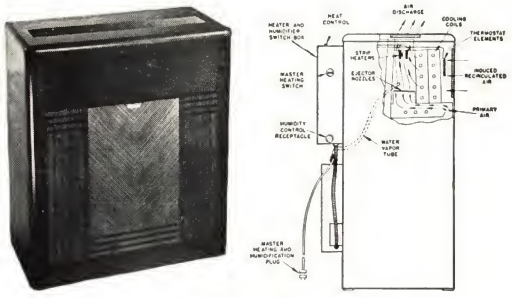
TYPE 50J—Floor Mounted

Application—This self-contained unit provides complete summer air conditioning—cooling, dehumidification, filtering and ventilation. Tempering coils and humidifier tank may be added to provide winter humidifying and air tempering.

Operation—A small Freon refrigeration unit provides the cooling effected; in air-cooled units, the heat from the condenser being discharged to the outside air. Condensation is re-evaporated to assist in sub-cooling the refrigerant. Water-cooled models are also available. Ample filtering surface is provided. Automatic controls may be supplied as required.

Installation—The unit is normally installed in front of a window so that the duct connection for ventilation (and condenser cooling air in air-cooled units) can be made over the window sill. An electric supply is the only connection required for the air-cooled units. Two gallons of water per hour must be supplied for the water-cooled unit.

Cabinet—The standard finish is a richly grained walnut. A prime coat finish can also be supplied. The floor space occupied is 36 in. by 18 in. by 40½ in. high.



Type 50J

VENTILATION, CIRCULATION AND CLEANING

250 to 500 c.f.m.

TYPE 56B—Room Ventilator

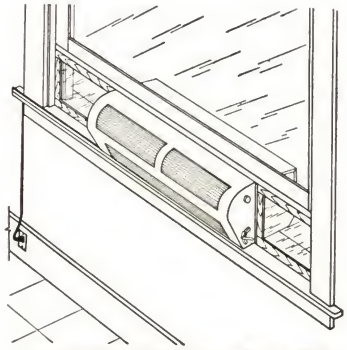
Application—This attractive unit is designed for window mounting. It supplies air from outdoors, recirculates room air, or circulates any desired mixture of room and outdoor air. All the air is filtered at all times. The air is delivered into the room through adjustable direction louvres, providing circulation throughout the entire room.

Operation—Efficient spun-glass filters assure the delivery of cleaned air to the room by two silent multi-blade fans. Sound insulation is also provided in the unit to further assure quiet operation. A recirculating damper is provided which is adjustable from the end of the unit and permits taking all outside air or all return air, or any proportion of each.

Installation—Each unit has two fastening lugs and two leveling screens for fastening the unit in the proper location in the window. End filler pieces are provided which allow mounting in windows up to 60 inches wide. Metal cap strips and rubber sealing strips are supplied with all units. The only connection required is electrical . . . for the 110 volt, 60 cycle motor. A D.C. motor is supplied when requested.

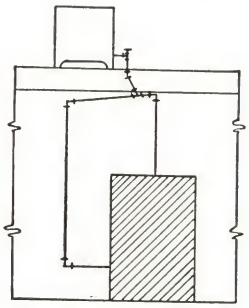
Cabinet—The cabinet is constructed of 22-gauge furniture steel, finished either in walnut brown or white ivory baked enamel. Cabinet dimensions are given in the table below.

Unit Number	Capacity C.f.m.	Fan		Dimensions, Inches	Shipping Weight, lbs.
		Hp.	Speed		
56B2	250	1/60	1500	24x 9½x11 11/16	35
56B4	500	1/15	1600	31x11 1/16x14 5/32	50

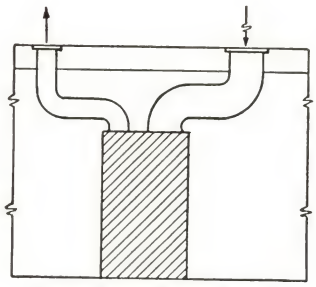


Type 56B

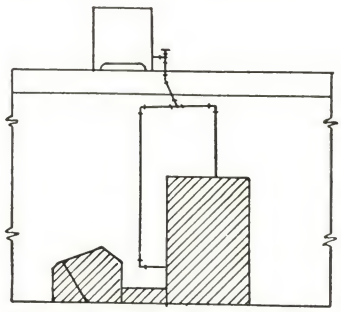
Installation Diagram—Type 56B



AUTOMATIC HEATING FOR RADIATOR SYSTEMS CARRIER BOILER FOR GAS OR OIL



DIRECT FIRED, WARM AIR CONDITIONER FOR OIL OR GAS



AUTOMATIC HEATING FOR RADIATOR SYSTEMS WITH CARRIER BOILER AND CARRIER STOKER

Direct-Fired Air Conditioner—Type 58C

DIRECT-FIRED AIR-CONDITIONER—Type 58C

The Carrier Direct-Fired Air Conditioner cleans, heats, humidifies and circulates air for distribution through ducts to various rooms in the house. In design and in the selection of metals and materials this new Carrier unit represents the most advanced engineering and manufacturing practice. It is extremely simple, very accessible, most compact, built for long life and efficient operation under all conditions. It is housed in an outer steel casing of attractive proportions and pleasing design. Its baked enamel, crackled finish will not chip or flake. Its colors, taupe and aluminum, harmonize well with any furnishings.

The air heating unit is of new and unique design. The air distributors between the heat transfer plates above the combustion chamber are of "tear drop" design. They provide an ingenious method of distributing the air while being warmed, and of regulating its velocity. "Parallel-flow" of air and hot gases warms the air evenly and rapidly. Maximum heat transfer is quickly effected with consequent economies. There is no meeting of the air and hot gases from opposite directions, never a chance of condensation forming.

Careful insulation of the cabinet, cushioned fan mounting and special burner design make this unit unusually quiet in operation. All electric controls insure continuous comfort and economy. The architect can safely specify this unit as the most modern for domestic use, especially when installed with a matching unit to supply summer cooling.

Models are available for gas or oil firing, both with capacities of 120,000 B.t.u. per hour output with outlet air at 154° F.

Air Conditioner—Type 59H

AIR CONDITIONER—Type 59H

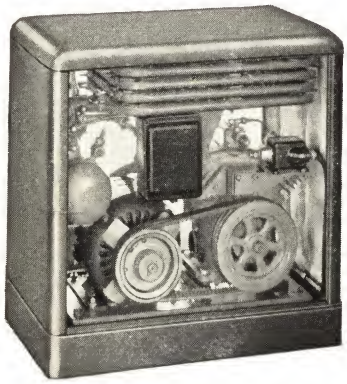
The Type 59H Carrier is a small unit designed for air conditioning small residences or limited number of rooms in large areas. It is extremely flexible in application and can be supplied to perform all functions of air conditioning, i.e., heating, cooling, humidification, dehumidification, filtering, circulating; or any combination of these functions desired.

The unit permits complete air conditioning in selected rooms of the house, and the heating by direct radiation of other sections of the house which do not require conditioning. By using multiple units supplied by one boiler, a "zoning" system may be obtained.

CAPACITIES AND DATA—TYPE 59H UNIT

	Heating		Tempering		Cooling	
Fan Speed RPM	860	1160	860	1160	860	1160
Air CFM @ 70°	450	450	550	550	400	400
Air CFM—Final Temp.	530	530	610	610		
BTU Per Hour	43,300	43,300	32,400	32,400	8,000	8,000
External Static Press. In.	.06	.21	.06	.21	.06	.21
Motor HP	1/30	1/12	1/30	1/12	1/30	1/12

Length 40" Width 40¾" Height 13⅝" Weight 350 lbs.



Matched Cooling Unit—Type 7K

REFRIGERATION FOR HOMES—Type 7K

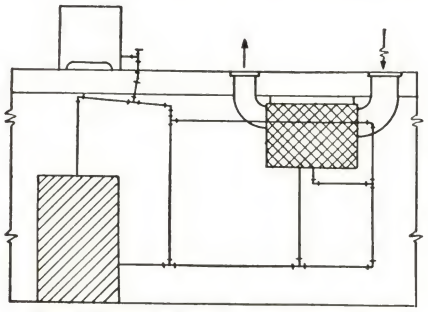
3 Tons, Type 7K3—5 Tons Type 7K5

The Carrier Matched Cooling Unit available in two sizes, 3 and 5 tons, when installed with the Carrier Home Air Conditioner, completes the system for year round air conditioning. The addition of the cooling unit can be made quickly and easily at any time. It is built to coordinate perfectly with the winter air conditioning unit. Both give you the ultimate in home comfort the year 'round.

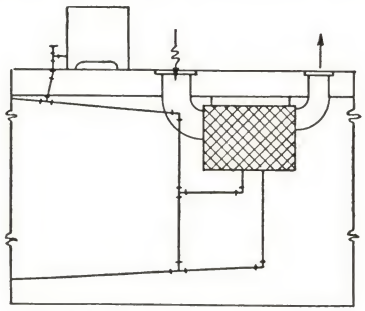
BOILERS—Types 61 B, C, D Steam—Hot Water

The New Carrier Boiler Type 61 is of the Fire Tube Type and will operate consistently at high efficiency. The boiler is a welded assembly of copper-bearing steel to assure long life. Many small flue tubes provide many linear feet of flue travel and a large area for heat transfer, which increases heating speed and boiler efficiency. The combustion chamber is

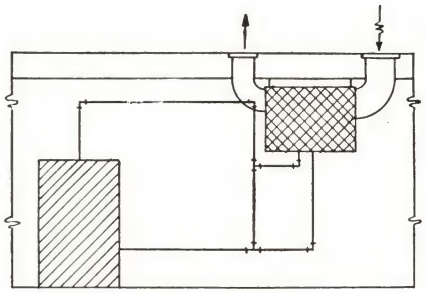
COAL-FIRED—HOME UNITS



SPLIT SYSTEM USING CARRIER BOILER WITH SEPARATELY MOUNTED CARRIER AIR CONDITIONER



SPLIT SYSTEM USING CARRIER AIR CONDITIONER WITH EXISTING HEATING PLANT



CARRIER AIR CONDITIONER SUPPLIED WITH HEAT BY CARRIER AUTOMATIC BOILER

designed to provide sufficient volume to permit complete combustion without impingement. It is refractory-lined to permit high flame temperatures and complete utilization of fuel.

The entire unit is housed in a cabinet with an attractive two-color crinkled finish. The interior of the jacket is lined with insulating material to conserve heat and thus maintain a casing temperature only a few degrees above room temperature. The standard control system uses Minneapolis-Honeywell throughout. Day-night control is available. Hot water for domestic use may be supplied by a "Tanksaver" or Tank Type Coil. The "Tanksaver" is a large capacity instantaneous hot water supply coil requiring no storage tank. This unit and control system is designed to provide utmost convenience at low fuel cost.

Type 61 Boiler has been adapted to oil firing and stoker firing with anthracite or bituminous coal as indicated, and in the capacities listed below. These ratings are based on 2 lb. steam pressure or 180° hot water with forced circulation.

Type 61B—For Oil Firing—9 sizes with capacities from 96.000—432,000 B.t.u. per hour.

Type 61C—For Bituminous Coal Firing—8 sizes with capacities from 117,000 to 360,000 B.t.u. per hour.

Type 61D—For Anthracite Coal Firing—9 sizes with capacities from 102,000 to 432,000 B.t.u. per hour.

OIL BURNERS—Type 62D

The Carrier Type 62D Oil Burner is designed as a conversion burner and for use with the Type 61B Boiler. It is a pedestal-mounted, gun type burner carefully engineered to ensure efficient and reliable operation. The motor fuel unit, transformer and fan are standard parts. The housing and air tube assembly are Carrier engineered and designed to provide maximum efficiency and minimum noise. Two sizes are available, which with appropriate nozzles, have the following capacities:

Type 62D2—1.35 to 3.00 gallons of oil per hour.
Type 62D3—3.00 to 4.00 gallons of oil per hour.

STOKERS—Type 63B

The Carrier Stoker is of the underfeed type and embodies all the newest engineering developments for the scientific burning of coal. The different models will soon pay for themselves in savings of fuel. These stokers have many outstanding features—compactness of design for operating convenience, precision control for accurate adjustment of fuel and air supply, and sturdy construction—assuring years of efficient low-cost service.

The working parts are lubricated from a splash feed oiling system, which requires filling only once a year. Each stoker is complete with controls, which consist of a Room Thermostat, a Hold Fire Control and a Limit Control. The Carrier Automatic Stoker for anthracite coal is approved by the Anthracite Industries, Incorporated.

STOKER RATINGS

Bituminous				Anthracite			
Stoker Size	Coal Feed lbs./hr.	Radiation, Sq. Ft.		Stoker Size	Coal Feed lbs./hr.	Radiation, Sq. Ft.	
		Steam	Hot Water			Steam	Hot Water
63B35	7 to 35	800	1280	6B13	5 to 15	435	697
63B50	10 to 50	1200	1920	6B15	5 to 20	580	950
63B75	15 to 75	1800	2880	6B18	25	720	1300
63B100	20 to 100	2500	4000	6B20	30 to 35	1000	1600
63B150	30 to 150	3800	6100				

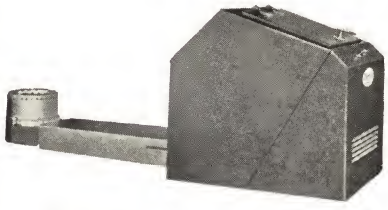
The above ratings are based on average conditions, using 12,000 B.t.u. coal with the stoker running approximately 12 hours per day.

WATER HEATERS—Type 60B

Carrier Water Heaters are built in two models. The 60B4 is a storage type heater with an hourly capacity of 40 gallons heated 100° F. The 60B5 is for use when a separate water storage tank is desired. It has a capacity of 50 gallons per hour heated 100° F. Both units use a wall-flame oil burner with a quick heating chromium steel flame ring and dependable electric ignition. There is only one moving part in this reliable burner. Number 2 Fuel Oil is commonly used. The steel jackets for both units are heavily insulated. A built in Water Temperature Regulator that is set with a touch of the finger automatically maintains the desired temperature in the storage type heater (60B4). An Aquastat of either the immersion or strap-on type is supplied with the 60B5 Heater.

Above—
Boiler
Type 61-B, C, D

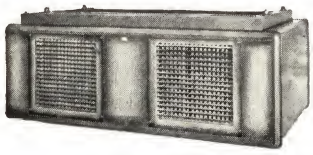
Right—
Burner
Type 62D



Above—
Stoker
Type 63B

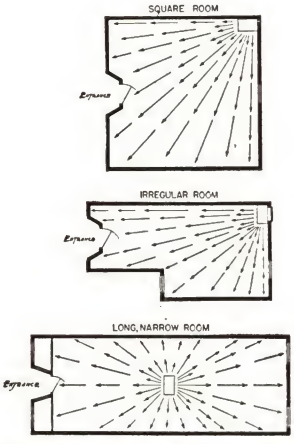
Right—
Water Heater
Type 60B

26
5

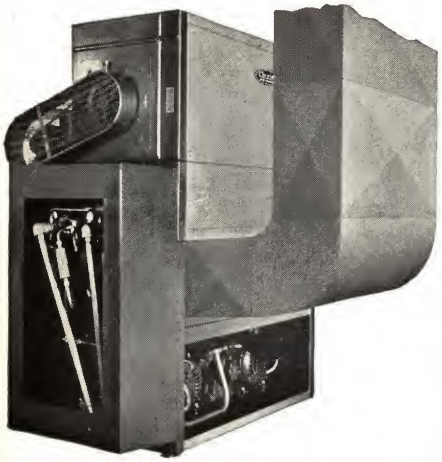


Type 39J

Type 50L



Type 50L—Air Distribution Diagrams



Type 41Q Showing Duct Connection

SUMMER COOLING AND DEHUMIDIFICATION

Chilled Water or Direct Expansion—(See Pages 10 and 11 for Refrigeration Units)

TYPE 39J, 8 Tons—Type 39D, 4 Tons—Type 39G, 2 Tons

Application—The Type 39J Weathermaster is designed for cooling, dehumidifying and circulation. An attractive grain finished casing and quiet operation make it suitable for location within the space to be cooled. Type 39J (illustrated), with its small vertical dimension makes it particularly adaptable for installation in cramped spaces over doorways, etc. Types 39D and 39G are single grille models with lower capacities. When quiet operation is essential, units other than Type 39G should be selected.

Operation—These units are intended primarily for free air delivery but when necessary may be installed with a short run of duct or an outside air connection. Cooling coils are offered for direct expansion Methyl Chloride or Freon and for chilled water.

Installation—The only connections necessary are for refrigerant piping, electric wiring and a drain for condensate moisture. Space requirements are as follows: Type 39J—50 x 29½ x 16 in. Type 39D—25½ x 22 x 20⅜ in. Type 39G—22½ x 23 x 22½ in.

SUMMER COOLING AND DEHUMIDIFYING

(Self Contained Unit)

3 Tons, Type 50L3—5 Tons, Type 50L5

TYPE 50L—Floor Mounted

Application—This self-contained unit, designed to occupy the minimum floor space, provides circulating filtered, cooled and dehumidified room air. Provision can also be made for heating and humidifying and for outside air connection, making this unit a deLuxe air conditioner for year 'round service.

Operation—Slow speed fans, a dynamically balanced compressor, plus thorough sound insulation ensure quiet operation. The self-contained thermostat conveniently located provides manual adjustment of the cooling effect. Independent control of the refrigerating unit and the fan is provided.

Installation—This unit requires only water and electrical connections. Type 50L3 requires 4.5 g.p.m. of condenser cooling water at 75° F., and 50L5 requires 7.5 g.p.m. Provision is made for outside air connection, in which case a proportioning damper is available as optional equipment.

Cabinet—The standard finish is a satin gloss walnut brown. The floor space required is as follows: Type 50L3—32½ by 20½ in.; Type 50L5—42½ by 20½ in. Both units are 7 ft. in height.

5 Tons, Type 41Q2—10 Tons, Type 41Q6

TYPE 41Q—Floor Mounting

Application—The Type 41Q Carrier Air Conditioners are entirely self-contained units which cool and dehumidify the air in summer; may be equipped to heat and humidify the air in winter; and clean and circulate the air throughout the year. The units are intended primarily for installation in concealed locations from which the air may be distributed evenly through ducts and outlet grilles into the space to be conditioned.

Operation—The cooling effect of the 5-ton unit is produced by an assembly of a non-ferrous coil section internally insulated and containing a 4-row direct expansion Freon cooling coil; a condensing unit section and a four-cylinder "V" type compressor, belt driven at 1350 r.p.m. by a 5 H.P. motor. In the 10-ton unit two such assemblies are used. The fans are of the double inlet centrifugal type with a double coating of corrosion-resisting material.

Automatic control of operation is accomplished by the use of automatic expansion valves, Pressurestats for controlling motor operation and water regulating valves for the cooling water.

Non-ferrous heating coils and "throw-away" type filters are supplied when required. Steam heated evaporative humidifiers are available as accessories for duct installation.

Installation—Besides the duct connections and a one inch drain the following connections are required:

Type 41Q2—Current connection for one 5 H.P. 220 volt, 3 phase, 60 cycle motor; and ¾ in. cooling water connections.

Type 41Q6—Current connections for two 5 H.P. 220 volt, 3 phase, 60 cycle motors; and two ¾ in. cooling water connections.

The space required is as follows:

Type 41Q2—48¾ in. wide x 21 in. deep x 72½ in. high.

Type 41Q6—66¾ in. wide x 28 in. deep x 83 in. high.

SUMMER, WINTER OR YEAR 'ROUND

50,000 to 480,000 B.t.u. per hr.—1 to 40 Tons

TYPE 39Q and 39R WEATHERMAKERS

Application—For direct expansion, chilled water, well water. These units are widely used for industrial buildings, small factories, etc. Extreme compactness and complete application flexibility are primary features.

Advantages—Minimum operating attention, acceptable quietness and high efficiency are important advantages. The built-in "Auditorium by-pass" may or may not be employed.

Type 39Q—Floor mounted to be located within or outside the conditioned space—with ducts.

Type 39R—Suspended from the ceiling located within or outside the conditioned space—with ducts.

Specificaton Features—Assembly is sectional—low installation cost.

Fans are of special high-efficiency design and performance. They are double-inlet, centrifugal, electrically welded steel, and die-formed.

For cooling and for heating coils; Aerofin type.

Piping connections are external.

Humidifier, an accessory installed in the duct, may be either steam-heated evaporator or tap-pressure atomizer type, as preferred.

PERFORMANCE AND PHYSICAL DATA—10 MODELS

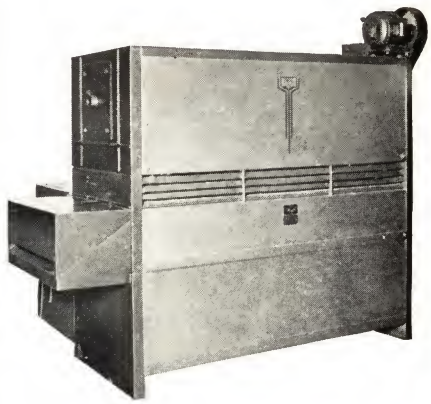
Unit No.	Tonnage Range	Average Heating Capacity Btu hr	Fans Max. C.f.m.	Motor hp. Range	Air Filters		
					No.	Size, in.	Wt.
39Q1 39R1	1–5	50,000	1000	¼–½	2 2	10x20 16x20	717 707
39Q2 39R2	2–10	100,000	2000	¼–¾	6	16x20	1053 1033
39Q6 39R6	5–20	200,000	4000	½–1½	9	20x20	1558 1538
39Q7 39R7	7–30	300,000	6000	¾–2	12	20x20	2170 2120
39Q9 39R9	10–40	400,000	8000	1–3	15	16x25	2440 2385

SPACE REQUIREMENTS

Unit No.	*Base Dimensions, inches			**Space required, inches		
	L	W	H	L	W	H
39Q1	27¼	21	63½	41	59	75½
39R1	27¼	35½	23¾	41	70	36½
39Q2	46½	21	63½	60	59	75½
39R2	46½	35½	23¾	60	70	36½
39Q6	59½	28	63½	78	69	79½
39R6	59½	42½	30¾	78	84	46½
39Q7	85¼	28	63½	104	69	79½
39R7	85¼	42½	30¾	104	84	46½
39Q9	85¼	36½	70½	104	82	86½
39R9	85¼	42½	39¼	104	88	55½

* Bare unit without motor, belt guard, filter box, and control box.

** Space required for proper installation including motor, belt guard, filter box, control box, and space on side opposite filters (39Q) or under unit (39R) to gain access to fans. Does not include space at end for removal of fan assembly or coils.



Front View 39Q Showing Grilles for Recirculated Air Inlet

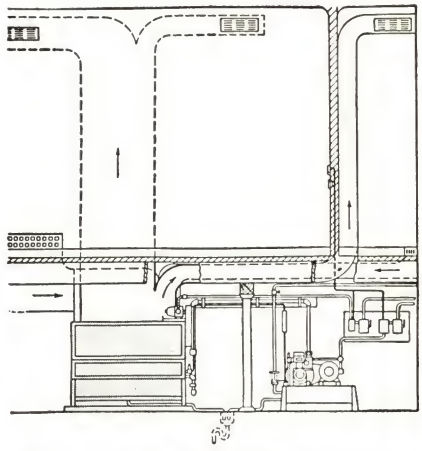
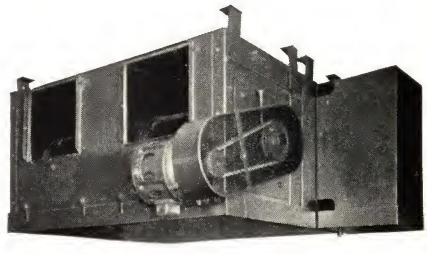


Diagram of a Typical 39Q Weathermaker Installation

Note Carrier Slotted Outlets . . . they are scientific in design and application. Weathermakers may be used singly or any number in multiple on one refrigeration unit or system.

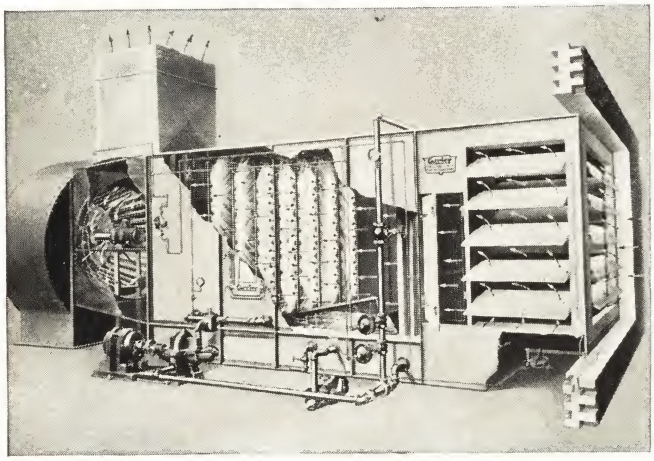


Outlet End of 39R Unit, Fans Visible Through Outlet Opening

26/5

AIR HANDLING APPARATUS (Central Plant) 2,000 to 350,000 c.f.m. per unit

Proper Selection—Complete and accurate study is necessary to determine the economic type, size and location of the equipment. Sometimes there may be two or more central stations, each to serve a part of the conditioned space, with the air distributed by ducts.



Cut Away Section of Central Plant Air Conditioning Equipment

The choice of equipment depends on many factors involved on each particular space to be conditioned. In some cases, spray type dehumidifier may be used. In other cases, cooling and dehumidification of the air is accomplished by passing it through finned coils, containing refrigerant, brine or cold water. Or there may be a combination—spray and surface cooling.

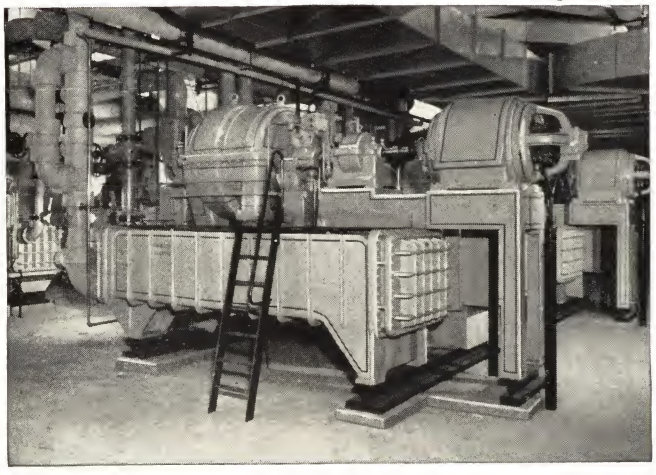
Description—The conditioned air is distributed from the central station apparatus to the conditioned spaces through scientifically designed duct and outlets, heating, humidifying, cooling, dehumidifying, cleaning and air circulation obtained with central plant system. Very close dew-point control maintained.

Refrigerated spray water for the air conditioning apparatus is usually obtained by mechanical refrigeration, although under favorable conditions, if very cold and in sufficient quantity, deep well or city water may be used, to remove excess heat and moisture from the air.

Operation—The outside air and usually a portion of the returned room air enters at right end of the plant and may or may not pass through preheating coils, before it enters the spray (or cooling coils) chamber. Here the air is cleaned and cooled by contact with the cold water spray (or coils) and the excess moisture removed by condensation. The air is then taken through reheating coils, to be brought up to proper conditions, mixed with the by-passed room air, and forced by the fan through the ducts to the conditioned space.

REFRIGERATION APPARATUS—CENTRIFUGAL MACHINE

50 to 1100 Tons



Description—The refrigerant is Carrene No. 2—non-toxic, non-explosive, non-inflammable, highly efficient. Machines are compact self-contained units, comprising evaporator centrifugal multi-stage compressor, and condenser on a single foundation. They furnish chilled water or brine to the process equipment or air conditioning apparatus, for processing, direct cooling of beverages or condensation of gases. Machines are available in various stages.

For process work, temperatures as low as minus 100° F. are attained, but for air conditioning work, spray water is not usually taken below 40° F. Machines may be located nearby or remotely from point of heat absorption. Made in eleven sizes with varying load conditions.

The compressor rotor is statically and dynamically balanced and the impellers are lead-coated to preserve this balance. The complete oiling system with pump is integral with compressor. Oil cooler is located externally.

Advantages—(1) *Permits wide selectivity in type of drive*—Such as synchronous motor, induction motor, slip-ring motor, Diesel or gas-engine, or steam turbine. It may be driven by high pressure steam and supply low pressure steam for heating or other industrial purposes, or it may utilize low pressure exhaust steam, operating condensing, or a combination of the two.

(2) *The steam turbine exhausts clean steam, free from contaminating oil.*

(3) *Machine is easy to start and operate*—It picks up load almost instantly; responds quickly to load changes.

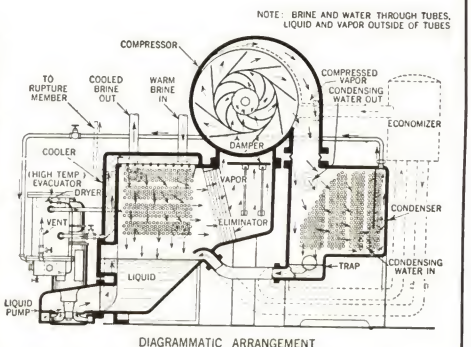
(4) *It is easy to maintain*—The few rotating parts are free from vibration and shock, simple, and light in weight. Easily accessible. Refrigerant does not come in contact with the oil.

(5) *Machine is safe*—Safe refrigerant. Moving parts are enclosed. Condenser and cooler operate under vacuum or slightly above atmospheric pressure.

(6) *Inherently resistant to wear*—Adjusts itself to fractional load without attention.

OPERATING CYCLE

The warm brine to be cooled (salt solution or water) is circulated through the cooling coils, over which is flowed the liquid refrigerant, brought over the coils by the liquid pump. The liquid refrigerant is evaporated from the coils, taking up the heat of the brine, and drawn into the compressor. The compressed gases are forced into the condenser, where the heat is removed by the condenser water coming from city supply, deep well or cooling tower flowing through the coils. The refrigerant becomes liquid again and flows back to the evaporative storage tank, completing the cycle.



DIAGRAMMATIC ARRANGEMENT

SUMMER, WINTER OR YEAR 'ROUND

20,000 to 480,000 B.t.u. per hr.—1 to 40 Tons

TYPE 43Q INDUSTRIAL WEATHERMAKER

Description—This unit is in reality a small central station plant, and may be connected with ducts to distribute air to portions of the conditioned space remote from the refrigeration or heating source.

Type 43Q unit is made up of a motor-driven fan section, a spray and coil section, eliminators, motor-driven pump and special air intake. Heater coils may be used. Unit may be equipped with auditorium by-pass if required. Units are designed for cooling, heating, dehumidification, humidification, ventilation, filtration and circulation.

SPECIFICATIONS

Unit No.	Max. c.f.m.	No. fans	Fan h.p.	Overall Dimensions, inches		
				Width	Length	Height
43Q1	1000	1	½	26	39½	87
43Q2	2000	2	1	26	58½	89
43Q6	4000	2	2	33	76½	104½
43Q7	6000	3	3	33	102½	104½
43Q9	8000	3	5	41½	102½	104½

Type 43Q
Floor Mounted

SURFACE TYPE DEHUMIDIFIER — DIRECT EXPANSION, CHILLED WATER OR BRINE—USED SINGLY OR IN MULTIPLE

2,000 to 32,400 c.f.m.—3 to 1000 Tons

TYPE 29R SURFACE DEHUMIDIFIER

Description—Consists of an encased bank of cooling coils, eliminator and drip pans made as one unit. Bank of coils may consist of one to six, including nine different heights and three different widths. The coils may be sprayed and the characteristic performance of a spray type dehumidifier obtained, securing compactness for duty.

Dampers for "By-pass" air around the coil are standard. Units furnished in 27 sizes, capable of being stacked or grouped to economically yield a wide variety of capacity and dimensional combinations.

Functions—Type 29R Dehumidifier is designed for the following services: (1) Cooling and dehumidifying in summer. (2) Humidifying in winter. (3) Air washing. (4) Close control of conditions.

To complete equipment fan, connection and duct are used with dehumidifier.

Advantages—(a) Sectionalized elements. (b) Cooling coils for chilled water, brine or direct expansion. (c) Closed pumping system with chilled water. (d) Elimination of corrosion inherent with open spray system. (e) The condensate from one stack of coils is immediately drained. (f) Coils are non-ferrous Aerofin. (g) Centrifugal distribution of cooling medium through tubes.

Performance Summary—*Cooling Effect*—Direct expansion; chilled water or brine, up to 160 tons (for largest size single coil).

Spray Water Capacity—Recirculating sprays: approximately 0.8 g.p.m. per sq. ft. of coil face area at 12-ft. head. Direct city water sprays approximately 0.11 g.p.m. per sq. ft. of coil face area at 25-lb. pressure.

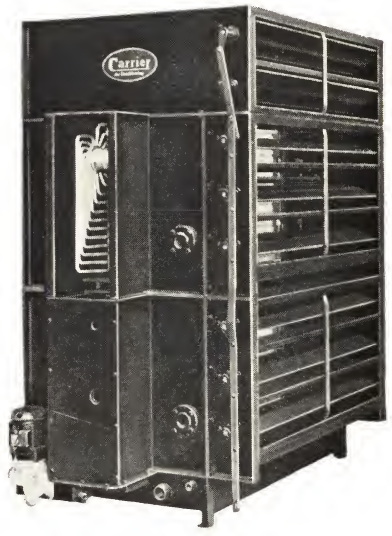
Rated Air Velocity—500 f.p.m.

Rated Air Resistance—4-row coil 0.62 in. water; 6-row coil 0.88 in. water.

DIMENSIONS, TYPICAL 29R SURFACE DEHUMIDIFIER

A = Width. B = Depth. C = Height.

Dimension in inches			Dimension in inches			Dimension in inches			Dimension in inches
60 Series			70 Series			100 Series			Common to all
Assem. No.	A	B	Assem. No.	A	B	Assem. No.	A	B	C
29R61	58¾	73¾	29R71	84½	99½	29R101	110½	125½	47⅜
29R62	58¾	73¾	29R72	84½	99½	29R102	110½	125½	55¾
29R63	58¾	73¾	29R73	84½	99½	29R103	110½	125½	84¼
29R64	58¾	73¾	29R74	84½	99½	29R104	110½	125½	92⅝
29R65	58¾	73¾	29R75	84½	99½	29R105	110½	125½	101
29R66	58¾	73¾	29R76	84½	99½	29R106	110½	125½	121⅛
29R67	58¾	73¾	29R77	84½	99½	29R107	110½	125½	129½
29R68	58¾	73¾	29R78	84½	99½	29R108	110½	125½	137⅞
29R69	58¾	73¾	29R79	84½	99½	29R109	110½	125½	146¼



Type 29R
Single Unit—27 Sizes
Floor Mounted

NOTE:

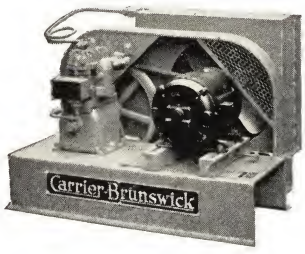
AIR DISTRIBUTING SYSTEMS

All of the above equipment is used with a duct system for distributing the air throughout the space to be air-conditioned.

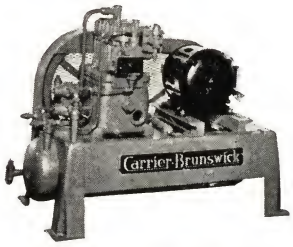
Outlets suitable for the kind of circulated air required, may be selected from many available types.

FREON, METHYL CHLORIDE REFRIGERATION

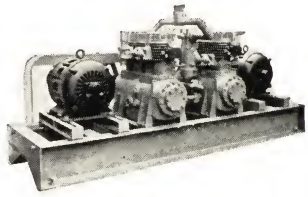
¼ to 50 tons—(See Page 8 for Carrier Centrifugal Machines)



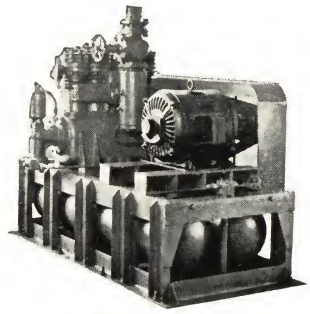
Type 7F2 Air Cooled, 1 to 1½ Tons



Type 7F4 Water Cooled, 3 Tons



Type 7H66, 10 and 15 Tons



Type 7G8 Water Cooled, 40 Tons

Twelve Reasons Why You Should Use Carrier Freon or Methyl Chloride Refrigerating Machines

(1) They are precision-built.
(2) They are made of quality materials.
(3) Quality is built into the manufacturing.
(4) Valves and ports are large.
(5) Valves are cushioned.
(6) There is minimum vibration.
(7) There is effective lubrication.
(8) Reciprocating parts are well balanced.
(9) Belts are over-size.
(10) They minimize superheating.
(11) Valves hold tight at any pressure.
(12) Low starting current—at full capacity.

CAPACITIES AND DATA—FREON AND METHYL CHLORIDE UNITS

Unit Number	Air Cooled—.182 to .71 Tons*							Water Cooled, and With Evaporative Condenser—5.66 to 30.18 Tons†							
	7H1-14x	7H1-13	7H1-12	7F2-34	7F2-10	7F2-15		7F5-50	7H5-75	7F6-100	7H6-150	7F66-100-100	7H66-150-150		
Motor hp	¼	⅓	½	¾	1	1½		5	7½	10	15	Two–10	Two–15	...	...
Std. speed, r.p.m.:															
Freon Units	470	610	800	285	320	470	...	450	600	450	600	450	600	...	...
Methyl Chloride Units	470	610	800	285	320	470	...	500	600	500	600	500	600	...	...
Nominal capacity*:															
Freon—1000 B.t.u./hr.	2.18	2.83	3.79	4.60	5.48	8.51	...	68.0	90.6	136.0	181.0	272.0	362.0	...	...
Tons	.182	.236	.316	.384	.456	.71	...	5.66	7.56	11.32	15.10	22.64	30.18	...	...
Methyl Chloride—															
1000 B.t.u./hr.	2.18	2.83	3.79	4.60	5.48	8.51	...	75.5	90.6	151.0	181.0	302.0	362.0	...	...
Tons	.182	.236	.316	.384	.456	.71	...	6.29	7.55	12.58	15.10	25.15	30.18	...	...
Air Cooled—over all dimens.:															
Length, in.	23½	23½	29	34	34	34	...	...	...	...	...	...	...	...	...
Width, in.	15½	15½	22¾	22 13/16	22 13/16	22 13/16	...	...	...	...	...	...	...	...	...
Height, in.	15⅜	16	23⅛	25 1/16	25 1/16	29½	...	...	...	...	...	...	...	...	...
Water Cooled Condensers, over all dimensions:															
Length, in.	...	...	...	...	...	...	...	60½	59¾	61¼	63¾	105	105	...	...
Width, in.	...	...	...	...	...	...	...	30⅛	30	37⅜	37⅜	38¼	38¼	...	...
Height, in.	...	...	...	...	...	...	...	41¾	44 7/16	41¾	44 7/16	46 11/16	55	...	...
Evaporative Condensers, over all dimensions:															
Length, in.	...	...	...	...	...	...	...	50	50	50	50	95¾	95¾	...	...
Width, in.	...	...	...	...	...	...	...	26¼	26¼	35½	35½	33 7/16	32⅞	...	...
Height, in.	...	...	...	...	...	...	...	30¾	33½	30¾	33½	32¾	41	...	...
Net weight, lbs.:															
Air Cooled	155	240	265	335	355	375	...	...	...	...	...	...	...	...	...
Water Cooled Condensers	...	...	...	...	...	...	...	1175	1265	1840	1895	3500	3500	...	...
Evaporative Condensers	...	...	...	...	...	...	...	1030	1120	1435	1535	2800	3100	...	...

Unit Number	Water Cooled, and With Evaporative Condenser—.413 to 2.96 Tons†							Water Cooled, and With Evaporative Condenser—19.1 to 50 Tons†							
								7G6-200		7G8-300		7G8-400		7G8-500	
	7H1-13	7H1-12	7F2-34	7F2-10	7F3-15	7F3-20	7F4-30	Water Cooled	With Evap. Condenser	Water Cooled	With Evap. Condenser	Water Cooled	With Evap. Condenser	Water Cooled	With Evap. Condenser
Motor hp	⅓	½	¾	1	1½	2	3	20	20	30	30	40	40	50	50
Std. speed, r.p.m.:															
Freon Units	510	740	285	355	285	390	350	800	800	450	450	500	500	570	570
Methyl Chloride Units	550	740	285	400	285	390	390	800	800	450	450	500	500	570	570
Nom. cap.,* Freon Units:															
100 B.t.u./hr.	4.96	7.22	9.47	11.80	17.98	24.60	33.10	229	229	489	489	543	543	...	...
Tons	.413	.601	.79	.974	1.49	2.05	2.76	19.1	19.1	40.7	40.7	45.0	45.0	...	...
Nom. cap., *Methyl Chloride Units:															
1000 B.t.u./hr.	4.87	6.55	8.96	12.60	17.20	23.50	35.40	229	229	489	489	543	543	...	...
Tons	.406	.546	.746	1.05	1.43	1.96	2.96	19.1	19.1	40.7	40.7	45.2	45.2	...	...
Water Cooled Condensers, over all dimensions:															
Length, in.	34¾	34¾	36	36	43¼	43¼	43⅜	63¾	...	102⅛	...	102⅛	...	102⅛	...
Width, in.	17¼	17¼	17⅝	17⅝	22¼	22¼	23⅛	37⅜	...	58½	...	58½	...	58½	...
Height, in.	18¼	18¼	22½	22½	31½	31½	32	44½	...	72⅝	...	72⅝	...	72⅝	...
Net weight, lbs.	240	260	310	330	465	475	585	1895	...	5000	...	5300	...	5400	...
Evaporative Condensers, over all dimensions:															
Length, in.	...	29	34	34	40½	40½	40½	...	50	...	80½	...	80½	...	80½
Width, in.	...	15⅞	17⅝	17⅝	22¼	22¼	23⅛	...	35½	...	58½	...	58½	...	58½
Height, in.	...	18¼	22½	22½	31¼	31¼	32	...	33½	...	58⅝	...	58⅝	...	58⅝
Net weight, lbs.	...	190	240	255	390	455	580	...	1535	...	3600	...	3900	...	4000

*90° Ambient Air, 20° Suction. †Suction 40° F., Condensing 98° F. xAvailable only in Air Cooled type.

Wide range of sizes and standard speeds provide selection advantages without forcing unit to fit duty desired. Units have air cooled, water cooled or evaporative type condensers.

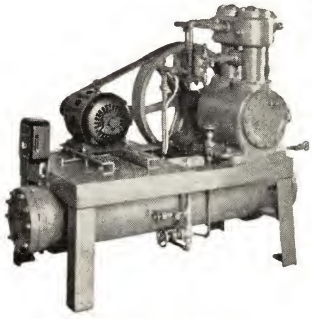
Each unit receives three tests, prior to shipment: (1) High internal pressure test. (2) Extremely high vacuum test. (3) Sensitive gas-torch test.

AMMONIA REFRIGERATION

These units are designed for small and medium size commercial refrigeration application of all types where ammonia is the preferred and accepted refrigerant. These units are available either as a self-contained unit with a belt drive from a motor mounted on the same base, or as a bare compressor which is driven by belt, or for direct connection for low speed motors or through gear reduction for high speed motors. These eccentric drive compressors have C. I. oil-bathed bearings of low unit pressure.

DATA ON TYPE 8B SELF CONTAINED UNIT

Unit No.	Cond. Size, Inches	ASRE, Tons	Comp., R.P.M.	Motor Hp.	Ship. Wt., Lbs.	Over-all Dimensions		
						Length	Width	Height
8B11	8x63	1.06	500	2	1285	5′- 8″	2′-0″	3′-10″
8B12	10x63	2.14	500	5	2100	5′- 8″	2′-0″	3′-5″
8B13	12x63	4.57	475	7½	2720	6′-11″	3′-3″	5′-0″
8B14	15x63	7.00	390	15	3780	6′-11″	3′-8″	5′-1″



Type 8B Ammonia Machine

EVAPORATIVE CONDENSERS

USED WITH REFRIGERATION UNITS IN PLACE OF AIR COOLED OR WATER COOLED CONDENSERS

3 to 8 Tons—Type 9P Methyl Chloride or Freon
10 to 40 Tons—Type 9Q Methyl Chloride, Freon, or Ammonia

Description—Condensing coils sprayed with water and air blown across. Utilizes use of heat removal for evaporation of water. Condensing medium is at wet bulb temperature of air.

When to Consider Them—(1) High Water Costs and Temperatures.
(2) High Power Costs, i.e., $.03 to $.07 per kw. hr.
(3) Low Maximum Wet Bulb Temperature.
(4) Inadequate Water Supply or Disposal Systems.
(5) City Ordinances Restricting Use of Water.

Their Advantages—A few advantages of the Evaporative Condenser over the cooling tower:
Low Compressor Power or, for the same power, greater compressor capacity because—
(a) The Evaporative Condenser provides a lower condensing temperature for the same outdoor wet bulb.
(b) Carrier Evaporative Condenser incorporates a liquid sub-cooling coil which adds materially to the efficiency of the system.

Low Installed Cost of System in Small Plants because of—
(a) Reduction of compressor size.
(b) Less cost for piping and pumps.
(c) Greater freedom in choice of location.
(d) Less expensive foundations and supports due to lower weight.
(e) Smaller volume of water circulated.

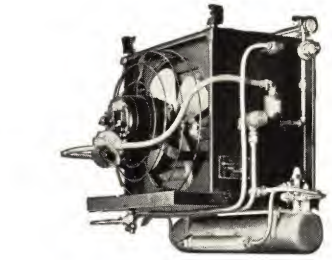
Principle of Operation—Water is sprayed on the finned coils which have a large water cooling surface. Propelled air evaporates a portion of the water. The heat of evaporation is taken from the refrigerant, which causes the refrigerant to condense.

Referring to the diagram at the right, fan (A) discharges air across condenser coil (B) to outdoors through duct (C). A fine jet of water from (D) is directed against target (E). The water is atomized upon impact and the spray is carried across the coil, wetting the surface to provide the water for evaporative cooling. The liquid refrigerant flows by gravity to the receiver (F) and from there to the strainer (G). The water supply enters through solenoid water valve (H), and flows through water pressure reducing valve (K).

EVAPORATIVE CONDENSERS

Type	Physical Dimensions				Approx. Refrig. Cap., tons	Fans			Pumps		
	Basic Dimensions			Oper. Wt., lbs.		No.	Type	Stand. c.f.m.	Hp.	Water cons. g.p.m.	Motor Hp.
	L., ins.	W., ins.	H., ins.								
9P2*	.....	.....	.....	250	3	1	Disc	1100	⅛	0.85	None
9P3*	.....	.....	.....	250	8	1	Disc	1370	⅛	0.4	None
9Q2†	47	21	63	2000	10	2	Cent.	2000	1	0.6	⅙
9Q6†	60	28	77	3000	20	2	Cent.	4000	1½	1.1	⅙
9Q7†	85	28	77	3650	30	3	Cent.	6000	2	1.7	⅙
9Q9†	85	37	77	4350	40	3	Cent.	8000	3	2.1	⅙

* Suspended. † Floor Mounted.



Type 9P Evaporative Condenser Suspension Mounted

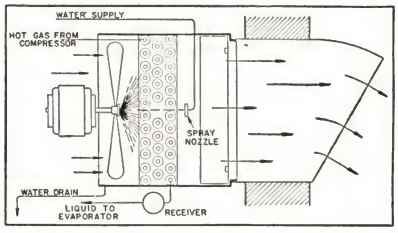
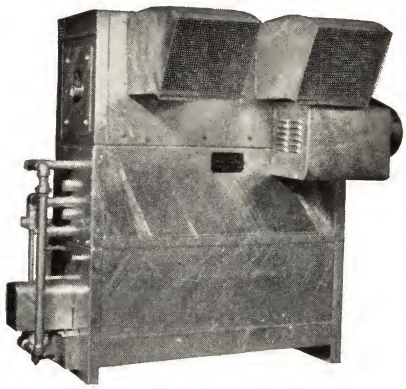
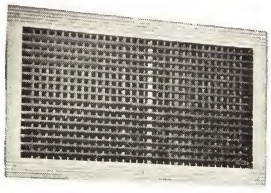


Diagram Showing Operation of Evaporative Condenser ....



Type 9Q Evaporative Condenser Floor Mounted

Front View of 35C1 Outlet with Snap Damper



Type 35C5 Adjustable Outlet

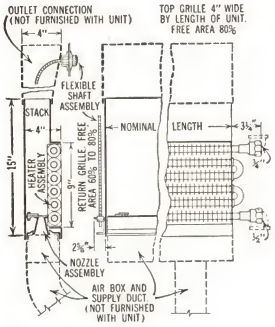


Diagram of 36B Weathermaster

Type 36C Weathermaster

Type 36D Weathermaster

TYPE 35C1 ROOM OUTLETS

Type 35C1—These outlets are designed to utilize the energy of multiple streams of high velocity air from the air conditioning system to induce a rapid secondary movement of room air. By the use of this principle a small quantity of low temperature air discharged at high velocity rapidly diffuses with a large quantity of room air and is distributed over a wide area without drafts and without the use of extensive duct systems.

Outlets are available with slot widths of ⅛ in., ¼ in. and ½ in. die formed from either galvanized steel or Allegheny Metal.

OVERALL GRILLE SIZES

Group Wide	Slots High	⅛" Slots Width in.—Height in.	¼" Slots Width in.—Height in.	½" Slots Width in.—Height in.
5	3	23⅝x4⅝	.....	.....
2	5	10⅞x6⅛	.....	.....
3	5	15⅛x6⅛	27¼x 9⅛	52x16
4	5	19⅜x6⅛	35⅝x 9⅛	.....
5	5	23⅝x6⅛	44⅛x 9⅛	86x16
5	7	23⅝x7⅝	44⅛x12⅛	.....
6	7	27⅞x7⅝	52⅝x12⅛	.....
7	7	32⅛x7⅝	61⅛x12⅛	.....
8	7	36⅜x7⅝	.....	.....

Duct Sizes for sheet metal collar connection may be obtained by subtracting ¼ in. from both overall dimensions; and for wood ground and extension collar connection by subtracting 1⅞ in.

TYPE 35C5 ROOM OUTLETS

Type 35C5—These outlets are particularly applicable to conditions where large air capacity, long blows and moderate temperature difference between air stream and room are required. They are available in prime finish, stainless steel or hot dip galvanized finish in the sizes listed below. Two sets of louvres are provided to control both horizontal and vertical distribution of the air stream.

OVERALL GRILLE SIZES

Width in.—Height in.	Width in.—Height in.	Width in.—Height in.	Width in.—Height in.
11⅞x8	20⅜x 9⅜	27⅝x12¼	20⅜x 6⅝
15⅜x8	20⅜x12¼	27⅝x15⅜	27⅝x 6⅝
15⅜x9⅜	27⅝x 8	11⅞x 6⅝	27⅝x18¼
20⅜x8	27⅝x 9⅜	15⅜x 6⅝	.....

Duct Extension Collar dimensions for Wood Ground and Metal (Concealed Duct Work) mounting may be obtained by subtracting 1¾ in. from both overall dimensions; for Exposed duct work use overall dimensions given above.

TYPE 36 WEATHERMASTERS

Description—The Carrier Weathermaster utilizes an induced air flow, drawing from the room to assure perfect diffusion of room and primary air.

Application—Weathermasters are especially adapted to offices, apartments, hotels and may be used for many other types of installations.

Type 36B—Model designed primarily for window sill concealment. Primary air from a central station system enters through nozzles, located in lower part of the Weathermaster, at high velocity, inducing a secondary air flow drawn from the room through a grille located at the front of the Weathermaster. A steam coil located in the secondary air inlet grille provides room control. Primary air in summer is cooled and dehumidified, in winter heated and humidified. Smaller quantities of air are handled due to the assured diffusion provided within the Weathermaster. Smaller air quantities permits smaller air distributing ducts.

Capacities—Twenty-eight sizes are available with capacities of the heating coil (based on 2 lb. steam) ranging from 2030 to 30,900 B.t.u. per hour.

Type 36C—Designed with primary air supplied by fan located within the Weathermaster. Secondary air is drawn from room through grille in front. Weathermaster consists of fan, motor, heating coil, and cooling coil for water. External cabinet 18 gal. rolled steel with baked primer and brown lacquer finish.

Capacities—Available in five sizes with capacities adapted to various sized rooms. Range from .67 tons to 1.33 tons of refrigeration.

Type 36D—Similar to Type 36C except that there is no fan in Weathermaster and the primary air is supplied from a central plant air conditioning system.

Capacities—Available in seven sizes, ranging from ½ ton to 1.7 tons of refrigeration.

Type 36E—Is essentially the same as Type 36B except that casing is included as part of outlet.

(For Refrigeration Equipment, See Pages 10 and 11)

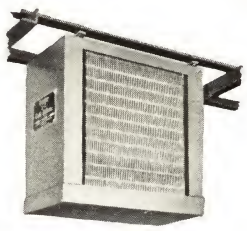
TYPE 1400—for Ceiling Suspension

0.1 to 0.75 Tons—200 to 1100 c.f.m.—Methyl Chloride or Freon Coils

Operation—Disc type fan is operated by a 1/50 to 1/15 Hp. motor. Cooling coil is of copper tubing with aluminum fins. The propeller fan draws the room air over the coil and discharges it horizontally into the conditioned space.

Installation—Easily installed. Weight, 105-175 lbs. Electrical, refrigeration and drain connections required.

Casing—Galvaneal, with green lacquer finish. Made in seven sizes. Overall dimensions: length, 15⅝-22¼ in.; depth, 21-23 in.; height, 15-22¾ in.



Type 1400

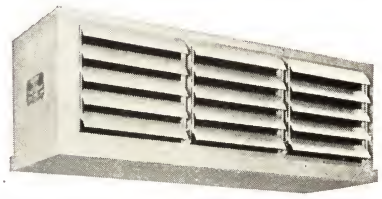
TYPE 1800—for Ceiling Suspension

0.2 to 1.5 Tons—500 to 3800 c.f.m.—Brine or Ammonia Coils

Operation—Disc type fan is operated by a 1/15 to three 1/6 Hp. motors. Available in one, two or three fan units. Adjustable deflectors control direction. Prime surface steel galvanized coil. Ceiling intake removes warm air.

Installation—Easily installed. Weight, 410-1030 lbs. Electrical, refrigeration and drain connections.

Casing—Galvanized steel, seafoam green lacquer finish. Made in three sizes. Overall dimensions: length, 24 3/16-62 11/16 in.; depth, 29¾ in.; height, 21 11/16 in.



Type 1800

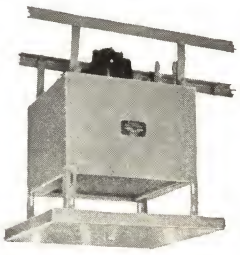
TYPE 15K—for Ceiling Suspension

0.5 to 3.5 Tons—700 to 3000 c.f.m.—Methyl Chloride, Freon, Ammonia or Brine Coils

Operation—The disc type fan is operated by a 1/15 to 1/3 Hp. motor. Methyl Chloride or Freon cooling coil is of copper tubing with aluminum fins. Coils have from three to seven circuits in parallel, depending on refrigerant and requirements. Ammonia or brine coil made of steel hot dipped galvanized, single circuit.

Installation—Easily installed. Weight, 260-455 lbs. Electrical, refrigeration and drain connections required.

Casing—Galvaneal sheet steel air dried light green lacquer finish. Made in two sizes. Overall dimensions: length, 26 3/16-34 5/16 in.; depth, 26 13/16-30 3/16 in.; height, 30⅝-35 3/16 in.



Type 15K

TYPE 15Q—Floor Mounted

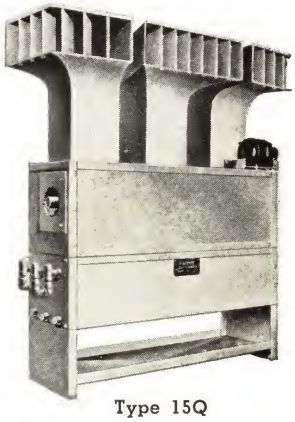
1 to 20 Tons Prime / 1 to 30 Tons Finned — Methyl Chloride, Freon, Ammonia or Brine Coil

1000 to 12,000 c.f.m.

Operation—One, two or three centrifugal type fans operated by ¼ to 5 Hp. motor. Cooling coil is either of copper tubing with aluminum fins, or of galvanized steel throughout. Air is drawn in through base by multiblade fans, discharged through outlet or ducts.

Installation—Units are made in sections, may be easily converted from top to side discharge. Multiple outlets provide directional air diffusion. Correct selection of air quantity and refrigerant temperature. Maintains constant conditions. Weight, 1050-3800 lbs. Electrical, refrigeration and drain connections required.

Casing—Pressed steel welded construction hot dipped galvanized finish. Made in four sizes. Overall dimensions: length, 27¼-85½ in.; depth, 21-28 in.; height, 105½-112½ in.



Type 15Q

TYPE 15T—Floor Mounted

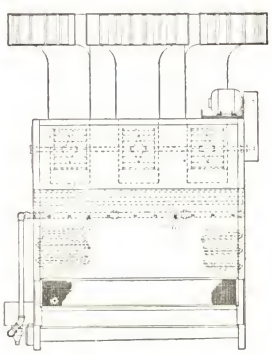
1 to 35 Tons—700 to 11,000 c.f.m.—(Brine Spray) Methyl Chloride, Freon, Ammonia or Brine Coil

Application—Low operating temperatures without loss of time for defrosting. The salt brine spray has germicidal action and prevents frosting. For storage rooms to be held near or below freezing (but above 10° F.) and where latent heat loads are heavy. Inhibits mold growth and disagreeable odors.

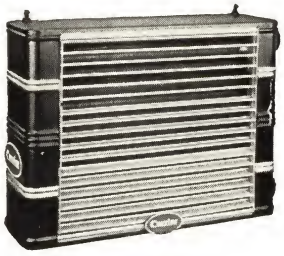
Operation—In brewery fermenting rooms, the 15T units may be used with sweet water spray instead of brine, thus serving as a combined air washer into conditioned space. One, two or three centrifugal type fans are operated by ¼ to 5 Hp. motor. Cooling coil is galvanized steel finned tubing.

Installation—Units are made in sections. Low velocity multiple outlets afford uniform air distribution. Fan section may be converted from top to side discharge in the field (except 15T9). Weight, 1250-4700 lbs. Electrical, refrigeration and drain connections required.

Casing—Pressed steel, welded construction hot dipped galvanized finish. Made in five sizes. Overall dimensions: length, 39-96 in.; depth, 21-36½ in.; height, 70-84 in.



Type 15T



Type 46E

DISC FAN TYPE UNIT HEATERS

TYPE 46E—for Ceiling Suspension

24,000 to 475,000 B.t.u.—Available in 25 Sizes

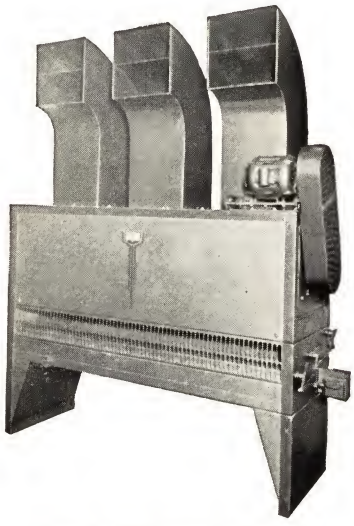
Application—Designed to heat for processing or produce and to warm the air for comfort at greatest fuel economy. They are unsurpassed for the following classes of applications: (1) Small areas with relatively low ceilings where comparatively few units are required. (2) Multi-story buildings in which heat losses are concentrated around the outside walls. (3) Where it is only necessary to keep sprinkler piping from freezing. (4) To eliminate condensate from process work and to prevent drippage from ceilings. (5) Rooms which are subdivided by partitions.

Features—Styled for appearance and utility. Added strength—die formed casing. No unnecessary restriction to air flow available in vertical or horizontal discharge. New non-protruding adjustable louvres, operated in 3 sections for straight, converging or diverging air flow for regulating length of flow. Aerofin coil, return bend construction. Tested to 1,000 lbs. hydrostatic pressure and guaranteed for 200 lbs. working pressure. Fans of latest design. Low noise level. Convenient hanger bolts. Steam supply and return connections on side of unit. Spring-suspended motor bracket absorbs vibration.

Motor of standard horsepower and size located on cool side of heater. Completely enclosed motor contains adequate thrust collar bearing. Thermostatic regulation. Units may be turned from one direction to another. All fan motors are tested before shipment.

Installation—Suspended from ceiling or trusses near shipping doors or other points of large air infiltration. With no air flow obstructions, units will deliver up to 50 to 60 ft. from the unit, depending on fan speed. Fan, propeller type, 12, 16, 19 and 22 in. diameter. Motor, 1/60 to two 1/3 Hp.

For capacities and dimensions, refer to Carrier Bulletin on Unit Heating.



Type 46Q—Floor Mounted

HEAT DIFFUSING UNITS

TYPE 46 P, Q, R—for Floor of Suspension Mounting

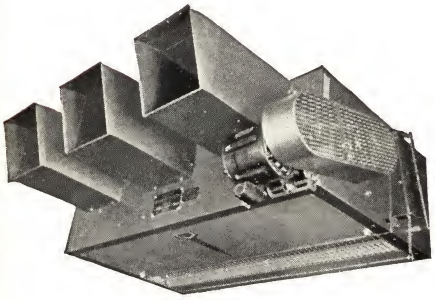
130,000 to 900,000 B.t.u.—Available in 20 Sizes—Belt or Direct Connected

Application—In heat diffuser work as in any heating problem, B.t.u. capacity is the starting point and the most important consideration in equipment selection. The units chosen must have sufficient capacity under the design conditions to maintain specified room temperature.

There are, however, other important elements such as location, air distribution, outlets, fan speed, air change, noise and controls, all of which require consideration, and influence the final selection of equipment.

Features—Low horsepower requirements. Unusual quietness. Flexibility of arrangement and location. Selective air distribution. High outlet velocity. Removable fan and shaft assembly. Provision made for free expansion and contraction of coil. 1000 lbs. hydrostatic test. No screwed joints or compression fittings. Wide choice of units. Ease of erection and handling. Guaranteed capacity ratings. Available in belt or direct connection.

Operation—These units take return air through heater coils, or through front of unit by-passing heater coils. Fan forces the heated air out through distribution outlets horizontally for maximum distribution. Type 46Q are floor mounted; the 46P also vertical but suspension mounted; the 46R horizontal suspension mounted. Multi-blade, centrifugal fans, 11¾ to 16 in. diameter, two or three fans per unit. Motor, ¼ to 3 Hp. 600 to 980 r.p.m. fan speed.



Type 46R—Suspended

GAS-FIRED UNIT HEATERS

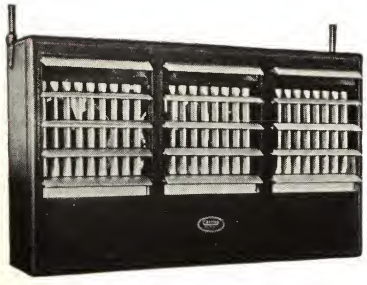
TYPE 46G—for Ceiling Suspension

70,550 to 211,650 B.t.u.—A.G.A. Rated Output*—Available in 3 Sizes

Application—Carrier Gas-Fired Unit Heaters are the economic answer to low cost, efficient industrial and commercial heating wherever manufactured, mixed, or natural gas is available; wherever steam is not otherwise required or is already at capacity or overloaded. Economies in (1) first cost, (2) installation cost, (3) installation time, (4) space saved, (5) piping materials and time, (6) plus saving of cost of constructing boiler plant—are introduced by the use of these efficient Heaters.

Features—Attractive finish—bright blue heat-resisting paint and aluminum louvres. Cleanliness—through gas heating. High effective heating efficiencies. Quicker "heat up" and more thorough distribution of heated air. "Silent" operation and safety assured by careful engineering design. A.G.A. and U.L. approval.

Installation—Carrier Gas-Fired Units are completely equipped with all necessary control and safety devices and require only gas supply, flue and electrical connections. Combustion chambers may be of cast iron or steel as specified. Models are available composed of one, two or three complete units in a single casing.



Type 46G (Three Unit Model)

CAPACITIES AND DATA—TYPE 46G

Heater Size		Motor H. P.	Rated B.t.u. per Hr.		Air Delivery C. F. M.	Dimensions W. H. D. In.
Steel Combustion Chamber	C.I. Combustion Chamber		Input	Output*		
46G3	46G13	One—1/20	85,000	70,550*	1300	22x37x28
46G4	46G14	Two—1/20	170,000	141,100*	2600	42x37x28
46G5	46G15	Three—1/20	255,000	211,650*	3900	62x37x28

*A.G.A Testing Laboratories rate all approved heaters at 75%—but efficiency of these units is much higher.

DEHYDRATION

Application—These units achieve direct control of humidity, independently of temperature. They meet a wide range of applications for maintaining low humidities in process work; controlling humidities in industrial plants; providing proper humidities in comfort air conditioning.

Description—Dehumidification of air is accomplished by the dehydrating quality of a solid adsorbent, Silica Gel. This substance will adsorb up to forty percent of its weight in moisture. The moisture is then readily expelled by the application of heat, so that the Silica Gel is again capable of adsorbing a like quantity of moisture. Silica Gel can be used indefinitely without deterioration or loss in volume. The efficiency of moisture removal increases as the inlet air becomes drier. There is virtually no limit to the dryness of air which may be secured; and thus by selecting the proper size of unit, moisture levels from practically anhydrous air to any higher level may be secured.

Silica Gel Dehydrator —Floor Mounted

Operation—The equipment used to dehydrate air by this principle is fully automatic. It consists of two series of Silica Gel trays or beds, together with motor-driven fans to propel the air to be dehydrated. The damper mechanism automatically changes the air stream from one set of beds to the other. A heater is used to expel the moisture, or "re-activate" the Silica Gel. A continuous air flow cycle is thus produced by this self-contained equipment. The standard heaters for activation are designed for use with gas. However, dehydrators for steam activation are available with steam at pressures of 100 lb. gauge or higher.

SPECIFICATIONS

Unit No.	Air Capacity, c.f.m.	Gas Consumption, B.t.u. per hr.	Motor Hp.	Dimensions, Inches		
				Length	Width	Height
53B6	600	70,000	½	57	30	46⅝
53B14	1300	147,000	1½	66	37	59⅝
53B27	2700	262,000	3	93½	50½	79½
53B50	5000	525,000	5	120¼	66½	118 3/16

Moisture Removal: The moisture removal capacity ranges from 26 lb. per hour for the 600 c.f.m. unit to 218 lb. per hour for the 5000 c.f.m. unit, based on an entering air condition of 9 grains per cubic foot. With the units used in multiple, a wide range of dehydrating capacities may be attained.

COMMERCIAL REFRIGERATION

Automatic Freezers—The automatic freezer, for Frosted Malteds, Soft Ice Cream, etc., has a capacity of one gallon and is equipped with automatic controls for keeping contents at proper consistency and temperature for immediate serving fresh from freezer without any attention from the operator. The unit is equipped with a half horsepower compressor and occupies a floor space of 26 x 31 inches.

Display Cases—Carrier Display Cases are made as self-contained units or for remote location of refrigerating unit. All models are available with 6, 8, 10 or 12 feet lengths and are durably finished in Dulux or in porcelain and rust-resisting steel. Improved construction makes these cases remarkably economical to operate.

Reach-in Refrigerator—Besides being of the most modern construction with the insulation sealed between steel walls, the refrigeration is of an entirely new type. The entire interior has the same uniform temperature. A high relative humidity of from 80% to 90% prevents the extraction of moisture from perishable and delicate foods, preserving their full flavor and purchase appeal.

Various models are available with solid or glass doors. The capacity is 35 cubic feet and the shelf area 40 square feet. The interior is finished in stain-proof porcelain enamel and exterior with high baked Dupont Dulux.

For smaller installations Model C25 is available with a storage space of 22 cubic feet and over 33 square feet of shelf area.

Frosted Food Cabinets—Carrier Frosted Food Cabinets are refrigerated with direct expansion coils requiring no brine. Correct design and placing of cooling coils ensure temperature equalization throughout the entire storage space. Four inches of pure cork insulation reduce operating costs. Two sizes are available, one with eight lids, and one with twelve lids, both occupying a minimum of floor space.

Beverage Coolers—The new Carrier Beverage Cooler CBC chills beverages in its own icy bath at 1/6 the cost of ice. The "Automatically Iced" feature maintains a constant supply of ice in the cooling compartment. Attractively finished and efficiently insulated, this cooler is available in two sizes. The CBC3 has a capacity of 240 12-oz. bottles (360 bottles corded) and the CBC2 has a capacity of 180 12-oz. bottles (270 bottles corded). Both coolers occupy a minimum of floor space.

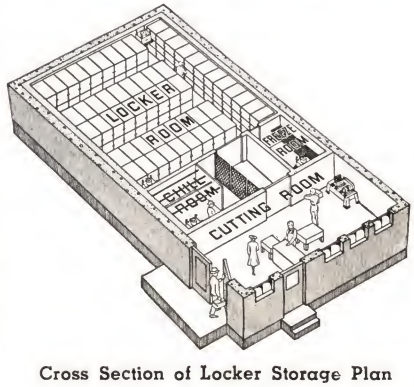
The Dry Type Beverage Cooler is beautifully finished in black crackled lacquer with a stainless steel top. Direct expansion coils provide the refrigerating effect. Two sizes are available with capacities of 288 and 432 bottles. The floor space required is 57 x 26 inches and 74 x 26 inches respectively.

Baker's Refrigerators—Carrier's Baker's Refrigerators are of massive construction with sturdy pan racks and ample storage space. They have shelves to hold every kind of perishable used in the bakery. The three door model has a total interior volume of 56 cubic feet (floor space 59¾ x 36¼ inches). The four door model has a total interior volume of 83 cubic feet (floor space 85½ x 36¼ inches).

Florist Refrigerator—This Refrigerator, with Carrier Air Conditioned Refrigeration, is an efficient and attractive unit for any florist shop. The interior is finished in dull satin black enamel. The exterior can be finished in any color desired.

Flat Type Cold Diffusers—These Cold Diffusers are especially adapted to use in reach-in refrigerators and occupy the least possible space. They are available in four sizes with capacities from 1000 to 3200 Btu. per hour.

Locker Storage—Food Locker Storage is a comparatively new application of refrigeration. Nevertheless, it uses the same equipment and principles generally as other refrigeration applications. With its wide range of refrigerating units, cold diffusers, etc., Carrier is well prepared to supply the most efficient and reliable equipment for locker storage application.

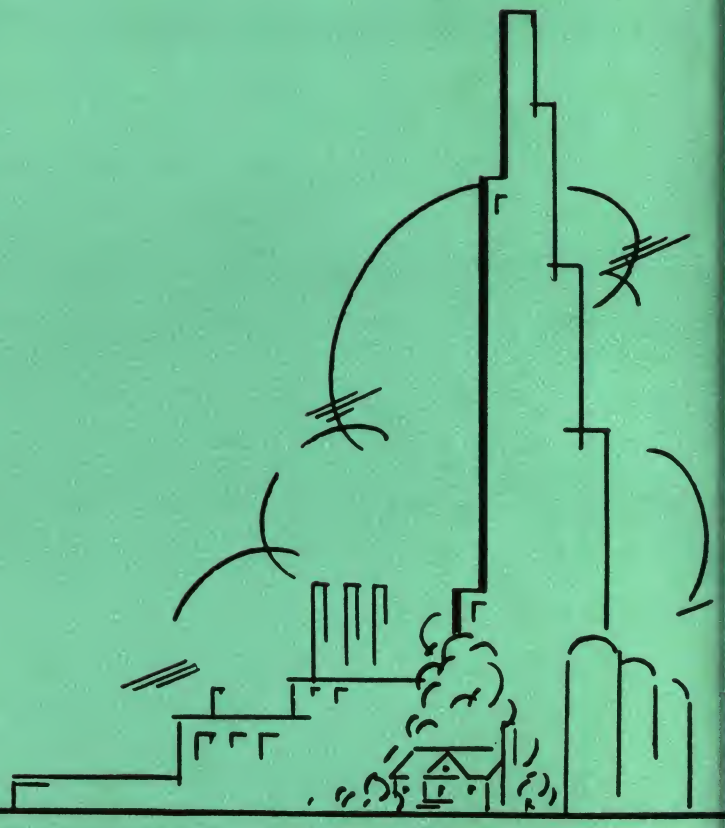


Cross Section of Locker Storage Plan

P R O G R E S S

Since that day in 1911 when Willis H. Carrier pronounced his Psychrometic Formulae, thus giving to the world the scientific basis of air conditioning, he and his associates have been constantly engaged in its research, development and applications. From that guidance and cooperation have resulted thousands of installations of Carrier equipment for the benefit of industrial processes and the health and comfort of human beings.

Pioneering in Centrifugal Refrigeration, dewpoint control, scientific distribution of air, low temperature product conditioning, modern space heating methods, industrial processing systems, standardized unitary systems, Home Weathermaker systems, evaporative condensers and many others, Carrier has not been content to rest on early laurels but continually leads the way with new developments. This brochure is designed to supply information even before calling the nearby Carrier representative who will be glad to cooperate in solving problems in Air Conditioning, Commercial Refrigeration and Heating.



CE114

Carrier

Air Conditioning
Refrigeration
Heating